

## ■ Features

**3-phase brushless DC motor**

- High power (high-speed and agile operation), high efficiency

## ■ Applications

- Amusement equipment

## ■ Model Number Legend

W2SKB-□

(1) (2)(3) (4)

- (1) Motor series  
 (2) Brushless DC motor <K>  
 (3) Ball bearing <B>  
 (4) Control number



## ■ Specifications

\*Values with OMRON circuit, at ambient temperature 20°C, motor voltage 24V, and hall voltage 5V

## &lt;Motor section&gt;

Item	Conditions	Ratings / Performance
Rated voltage	—	24 VDC ±5%
Rated load torque	—	10 mNm
Rated load rotation speed	Rated load	4,700 rpm or more
Rated load current	Rated load	600 mA or less
No-load rotation speed	No load	5,500 rpm or more
No-load current	No load	200 mA or less
Starting current	Two-point method with no load and rated load	3,000 mA or less
Starting torque	Two-point method with no load and rated load	40 mNm or more
Resistance between terminals	Between U-V, V-W, W-U phases	8.9 Ω ±10%

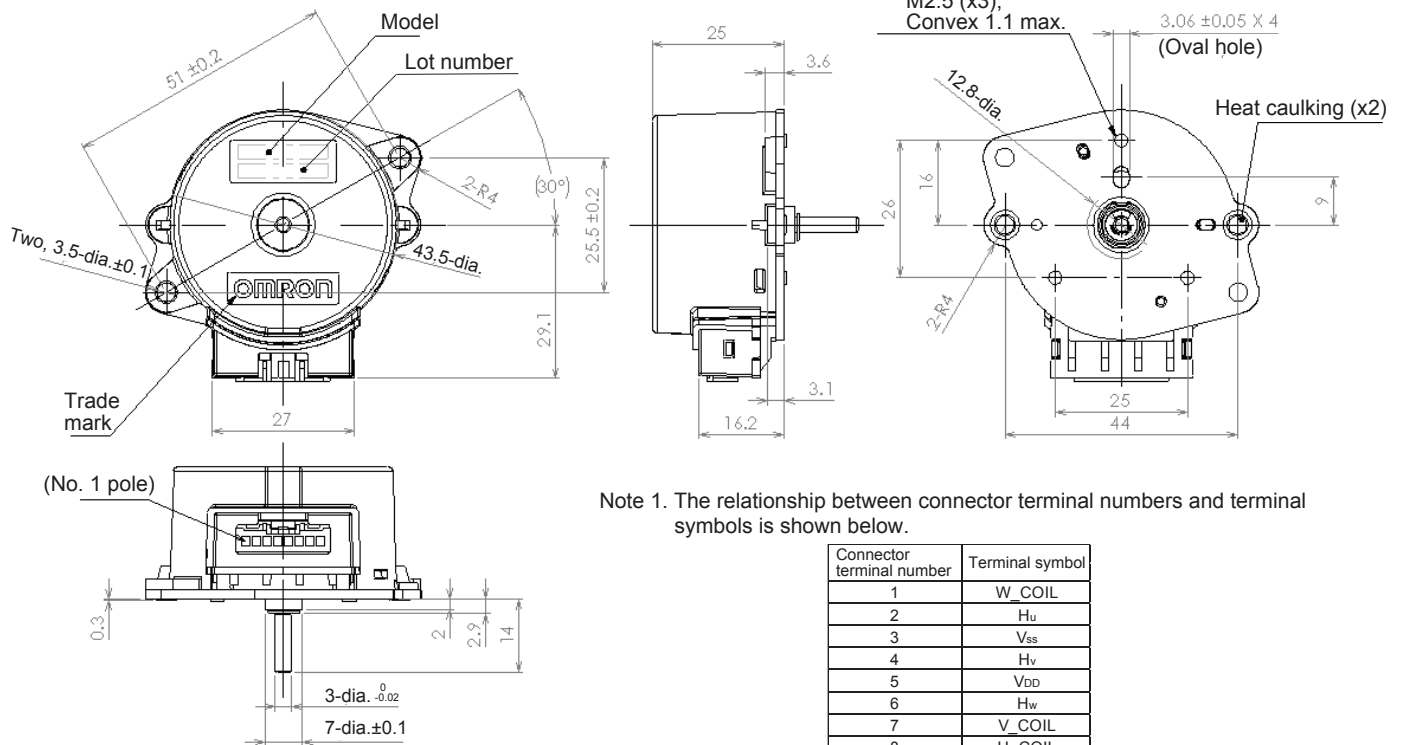
## &lt;Hall sensor section&gt;

Item	Conditions	Ratings / Performance
Rated voltage	—	5 VDC ±5%
Pulse count	Per motor shaft rotation	36
Current consumption	Total of 3 pieces	30 mA or less

## &lt;Common&gt;

Item	Ratings / Performance
Ambient temperature	Operating: 0 to 50°C (with no icing or condensation) Storage: -10 to 60°C (with no icing or condensation)
Ambient humidity	25 to 85% RH
Insulation resistance	100 MΩ at 500 VDC
Withstand voltage	500 Vrms (AC50 Hz, 1 min)

## External Dimension



\* The dimensional tolerance must be ±0.5 unless otherwise specified.

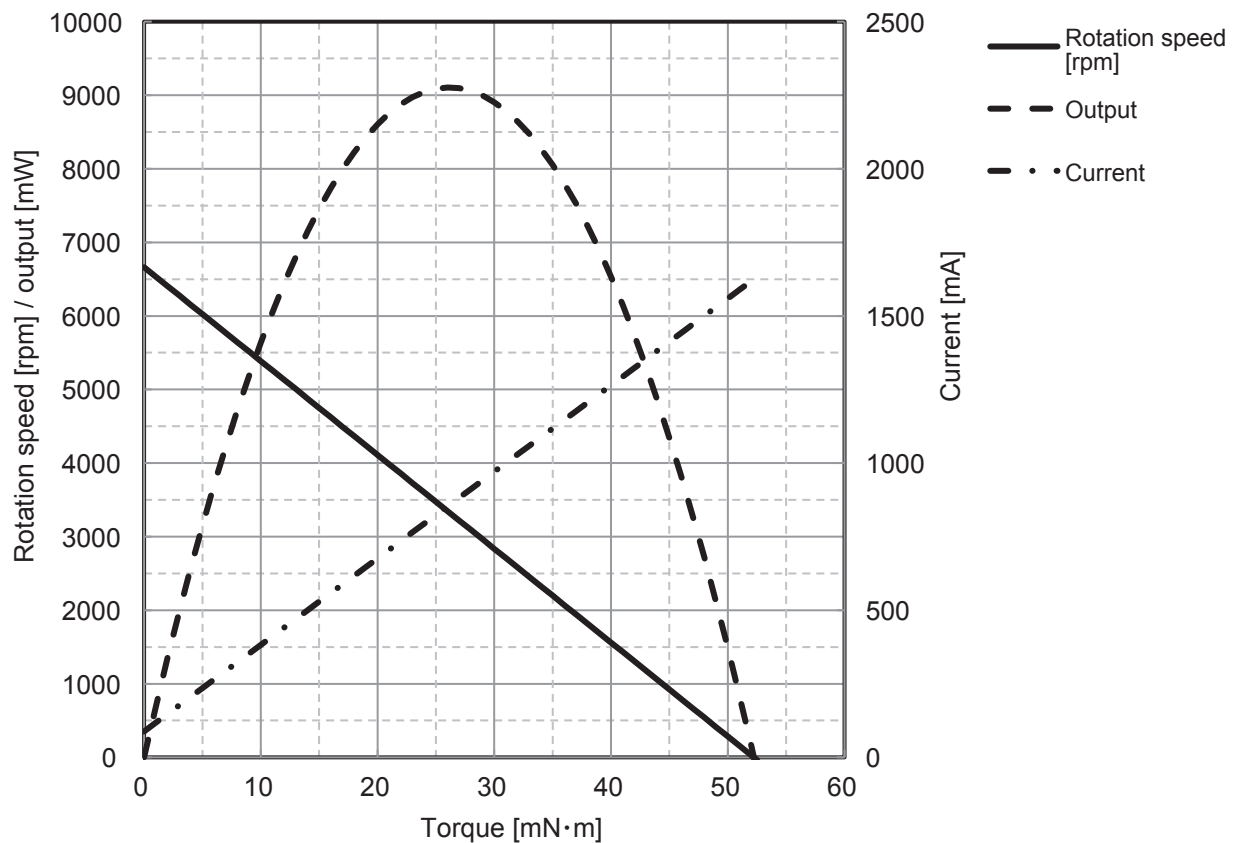
Connector: S08B-PASK-2 (J.S.T. Mfg. Co., Ltd.)

Note 2. The housing that fits the connector section must be the PAP-08V-□ manufactured by J.S.T. Mfg. Co., Ltd.

## Engineering Data

Characteristics diagram <W2SKB>

Motor drive voltage 24 VDC, ambient temperature 20°C, Typical example (reference value)



## ■ Precautions for Use

1. Precautions
  - Do not insert or remove connectors while the motor is energized.
  - Do not touch moving parts while the power is ON.
  - Do not touch the product while it is energized or for a while after it is energized. Doing so may result in burns.
  - Continuous energizing at overload or repeated reversal operation will cause the motor to become hot, so provide an appropriate interval as a cooling period.
  - Do not apply impact by dropping or other means. Doing so may damage the motor.
  - Motors are relatively susceptible to impact due to their structure.
  - Motors are relatively susceptible to impact due to their structure. Do not apply strong impact to the main unit. Similarly, do not apply strong impact to the output shaft.
  - Do not disassemble the inside of the motor. Doing so may damage the motor.
2. Precautions for assembly
  - Perform the assembly work in such a way that no force is applied to bend the output shaft.
  - When press-fitting pulleys, etc. onto the output shaft, hold the opposite side of the output firmly.
  - When gluing pulleys, etc. to the output shaft (including the adhesion of screws when screwing them in place), be careful not to allow the glue to flow into the bearing. In addition, select an adhesive material that is not affected by the oil contained in the bearing.
3. Layout
 

The bearing oil used in motors may cause cracks or other defects in some resins. When placing resin near the motor, carefully check before selecting the resin.
4. Input Line
 

The motor does not have a built-in fuse. In case of mechanical trouble, there is a risk of smoke or fire, so take safety measures such as inserting a fuse in the input line.
5. Prevention of Circuit Element Destruction
 

When the motor is released from the operating state, a surge voltage may be generated, destroying circuit elements, so we recommend that a protection circuit be installed.
6. Mechanical Load Connection
 

When connecting a motor to a mechanical load, be sure to connect the motor output shaft and the mechanical load without misalignment. A poor connection may cause a decrease in life cycles and malfunctions.
7. Magnetic Generation
 

When the motor is energized, magnetism is generated from the coil. When using the product near computer screens or other parts that may be affected by magnetism, make sure that there is no magnetic influence.
8. External Magnetic Circuit
 

When the motor is energized, magnetism is generated from the coil and a magnetic circuit is formed. The motor is operated by this magnetic circuit. Therefore, if motor mounting plates, mechanical connection parts, stoppers, etc. are all composed of magnetic materials, note that an external magnetic circuit may be formed, which may cause operation failure due to reduced torque, mechanical lock at the start of operation, etc.
9. Vibration Range
 

Motors have a vibration range, so carefully check the range before use. The frequency of the vibration range is almost fixed, but changes slightly depending on the load.
10. Controls
 

If power is continued for a long time with the output shaft locked, a large current will flow, causing overheating. Control the motor so that it detects the locked condition and shuts off the power to the motor.

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